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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

PHAM, HAI CHI

ART UNIT PAPER NUMBER

2861

DATE MAILED: 08/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,481

Applicant(s)

HAMADA, TAKATOSHI

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-11,13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 09 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 8:

- The following limitation “wherein a synchronizing optical output of the detected optical beam is subjected to a wavelength converting device” is not supported by the specification, where the claimed synchronizing optical output is understood as the electrical signal or synchronizing signal outputted by the photosensor (13) in response to the detected optical beam, and where the detected optical beam (not the synchronizing optical output) is being subjected to a wavelength converting device before the converted beam impinges the photosensor.

Claims 9-10 are dependent from claim 8 above, and are therefore rejected for the reason.

Appropriate correction is required.

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3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2, 4-11, 13-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1:

- The following limitation “the optical scanning device emitting an optical beam” at line 5 appears to be misleading in that the optical beam is part of the optical signals transmitted by the transmission device through the optical fiber and that the optical scanning device only scans the optical beam coming out the exit end of the optical fiber. The following is a suggested correction --the optical scanning device scanning [emitting] an optical beam emitted from an exit end of the optical fiber--.

Claim 8:

- The following assessment “bi-directional communication is accomplished using the optical fiber transmitting the optical signals (emphasis added)” is unclear in how the bi-directional communication is happened since the only signals carried by the optical fiber are the optical signals sent by the transmission device creating a one-way communication from the transmission device end to the optical scanning device side while neither the synchronizing optical output nor the detected optical beam is claimed to be transmitted through the optical fiber in the opposite direction.

Claim 11:

- The following assessment "bi-directional communication is accomplished over the optical fiber transmitting the optical signals by the transmission device and the optical scanning device (emphasis added)" is unclear in how the bi-directional communication is happened since the only signals carried by the optical fiber are the optical signals sent by the transmission device characterizing a one-way communication from the transmission device end to the optical scanning device side while neither the synchronizing optical output nor the detected optical beam is claimed to be transmitted through the optical fiber in the opposite direction.

Claims 2, 4-7, 9-10, 13-14 are dependent from the above claims 1, 8, and 11, and are therefore indefinite.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Minakuchi et al. (U.S. 5,838,001 in view of Phillips et al. (U.S. 6,584,052 B1).

Minakuchi et al. discloses an image forming apparatus comprising an optical fiber (optical fibers 121-128), a transmission device (light transmission device 100 including

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the semiconductor lasers 101-108) connected to the optical fiber, the transmission device transmitting optical signals (laser fluxes) over the optical fiber, an optical scanning device (polygon mirror 180 and scanning lenses 190) connected to the optical fiber, the optical scanning device scanning the optical beams emitted from exit ends of the optical fibers, a synchronizing device (synchronization sensor system 220) detecting the optical beams and generating a synchronizing signal in response to the detected beam.

However, Minakuchi et al. fails to teach the synchronizing device being connected to the optical fiber performing a bi-directional communication.

Phillips et al. discloses an optical scanner in which the laser beam emitted by the laser source 38 and transmitted through an optical fiber (33) is reflected back to a photosensor (37) on the same optical fiber, which performs a bi-directional transmission of the optical signals (Fig. 2A).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the bi-directional transmission optical fiber as taught by Phillips et al. in the device of Minakuchi et al. The motivation for doing so would have been to provide a routing means of the optical signal from the detected area to the signal generating means.

Minakuchi et al. further teaches the detected optical beam being reflected toward the sensing area by a reflecting device acting as a SOS mirror (221).

Allowable Subject Matter

7. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 2, 11, and 13-14 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of the claimed invention is the inclusion of "a wavelength converting device converting a wavelength of the detected optical beam", in the combination as currently claimed in claim 2, the combined inclusion of "a synchronizing optical output is different from a signal wavelength of the optical signals" and "bi-directional communication is established over the optical fiber transmitting the optical signals", as currently claimed in each of the claims 11, 13-14, and which are not found taught or fairly suggested by the prior arts made of record, considered alone or in combination.

Additional Prior Arts

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shinohara (U.S. 4,675,741) discloses an image forming apparatus including a synchronizing device connected to an optical fiber for detecting the reflected optical beam and for generating a synchronizing signal in response to the detected optical beam.

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Muto et al. (U.S. 5,371,608) discloses an optical scan apparatus including a light source for image recording and a separate light source for synchronous detection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (703) 308-1281. The examiner can normally be reached on T-F (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin R. Fuller can be reached on (703) 308-0079. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722, (703) 308-7724, (703) 308-7382, (703) 305-3431, (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


HAI PHAM
PRIMARY EXAMINER

August 15, 2003